AN OVERVIEW

OF THE PROPOSED

DICKEY-LINCOLN SCHOOL LAKES

HYDRO-ELECTRIC PROJECT

AROOSTOOK COUNTY, MAINE

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NEW ENGLAND DIVISION
CORPS OF ENGINEERS
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water ecosystem. Inundation would destroy 278 miles of free flowing rivers and streams plus 30 lakes and ponds would be lost. Transmission facilities would cross 352 rivers and streams and 80 wetland areas. Streams involved in the transmission line would be subjected to slight local increases of temperature and short-term increases in sediment load.

B. Wildlife Impacts

Along the transmission line clearing a continuous edge of wildlife habitat would be created over the three state region that includes some of the more remote forests in the northeastern United States. This edge habitat would benefit most terrestrial vertebrates, but a few would suffer irretrievable loss of habitat. 339 miles of transmission right-of-way would create an increase or have a positive impact on the "all wildlife" habitat values, whereas 24 miles would be negatively impacted. Some sensitive and important wildlife species in remote areas would be significantly stressed as a result of increased access afforded to off-road vehicles and commercial logging operations.

In total, 80,455 acres of terrestrial habitat would be lost in the reservoir area and 6,030 acres modified by the transmission lines. 36,893 acres of deer wintering yards would be inundated and 138 acres impacted by the transmission lines.

C. Timber Land Impacts

Flooded reservoir areas and rights-of-way clearing would cause 81,946 acres of timber land to be removed from production resulting in a loss of annual growth of timber of 44,395 to 52,100 cords. Opportunity costs due to foregone timber lost would range between $216 and $322 million over the 100 year economic life of the project.

D. Social Impacts

An estimated 166 families and 16 commercial facilities would have to be relocated as a result of the project. Of these, 5 residences and 1 commercial facility are along the proposed transmission route.

Seventy-five miles of private logging roads would be inundated and about 200 miles of additional new access roads would be needed off the transmission line right-of-way. The line would cross 37 paved roads. Some 247 acres of active agricultural land would be flooded by the impoundments. Forty-two acres of agriculture land would be impacted during transmission line construction and about two acres of agriculture land would be permanently impacted by transmission structures. The dams would provide varying degrees of protection to some 4500 acres of agricultural land downstream along the St. John River.

Labor force required for the reservoirs would amount to approximately 6,000 man-years of effort and would average 200 during the winter and 900 from May through October. An estimated peak labor force of up to 1900 people would occur during construction years 4 through 7. The labor force required for the 365 miles of transmission facilities would be about 870

man-years of effort spread over a 5½ year construction period occurring over the later years of dam construction. 300-450 people would constitute a peak labor force during years 4 through 5.

The influx of an outside construction force is expected to adversely impact the rural communities near the dam construction site in the St. John Valley by placing burdens on services and facilities. The present social and economic structure of the area would be irreversibly altered. It would be replaced in part by a different set of values and standards. Construction forces for the transmission facility would be distributed at locations along the 365 miles of line and socio-economic impacts would be dissipated and consequently minimized.

E. Visual Impacts

Construction of the proposed project would have several major impacts on the aesthetics of the region. The greatest impact for the reservoir area would be the inundation of a river valley. The visual quality of this portion of a scenic river valley would be lost forever. This loss in visual quality is the product of the loss of thousands of acres of forest and the loss of a free flowing river with its many rapids and tributaries. The filling of the reservoir would create numerous scenic coves and islands with forested backdrops. To the recreationist, there would be many pleasant visual experiences offered by the lake, hills and natural surroundings. The transmission structures and cleared right-of-way would have an impact on the visual quality of the scenic rural landscapes of Maine, New Hampshire, and Vermont. (183 miles of the proposed route would adversely impact the visual quality of the area, and there would be 56 miles of high and 17 miles of severe viewer impacts.)

F. Recreation Impacts

The proposed project would have an impact on the wilderness character of northern and western Maine, northern New Hampshire and Vermont. Inundation would eliminate the major portion of the St. John River available for white-water canoeing and 42 primitive camping sites. Located along the shoreline of the proposed impoundment would be an initial development of 24 primitive camp sites. The transmission line would have severe impacts on about 13 recreation sites and areas (for example crossing a popular canoeing river).

G. Cultural Impacts

Thirty-seven archaeological sites and 6 historical sites are within the area of the project that would be inundated. Within 1/4 mile of the proposed transmission line route, there are 5 potential archaeological sites and 25 historical sites. In addition to these, there are 41 historic resources that are within the viewshed of the transmission line.

I INTRODUCTION

The Dickey-Lincoln Project in northern Aroostook County, Maine is a proposed Federally financed hydro-electric power generating facility. Electric energy generated by the facility would be introduced into the New England Power Pool system through construction of new transmission lines across northern Maine, New Hampshire, and Vermont.

Responsibility for investigation and construction rests in the two Federal agencies, i.e. dams and reservoirs in the U.S. Army Corps of Engineers and transmission lines in the U.S. Department of Energy (DOE). The two actions are part of the same proposal, although they are in essence separate and distinct. The dams would convert a riverine and forest ecosystem into an 88,000 acre man-made reservoir system while the transmission line, a linear development, would stretch over 365 miles and require clearing of approximately 6,000 acres of timber land. The location and size of the dams determine the extent of the reservoirs while the alignment of the transmission facilities is more flexible to allow avoidance of sensitive environmental areas. Transmission line routes 1/2 mile wide were studied in detail for environmental impacts to allow for final adjustment of the right-of-way as necessary. However, impacts are presented for a right-of-way assumed to be the center of the 1/2 mile route.

Separate draft environmental impact statements (DEIS) have been provided for the two actions. The Corps coordinated public review of the DEIS for the dams and reservoir system between 31 August and 8 December of 1977 and the DOE DEIS will receive public review beginning in early April 1978. During the public review of the DOE DEIS, the Corps will reopen comments on its DEIS to allow total review of both actions. A final EIS will be developed by the Corps in cooperation with DOE consummating the total proposal and all public review comments.

The following brief overview of the combined proposal is presented as a primer to assist those who wish to review and/or comment on environmental impacts of the project. It is not intended as a document to be specifically commented upon. Rather it serves to summarize some numerically cumulative impacts as a frame of reference for individual review.

II PROPOSED ACTION

The proposed Dickey-Lincoln School Lakes Project in northern Maine is a multipurpose installation on the St. John River. The combination hydro-electric power, flood control and recreation project is located in Aroostook County, Maine, near the Canadian border.

The two proposed earth fill dams located at Dickey are 10,200 feet in length with a maximum height of 335 feet. They would impound 7.7 million acre feet of water at a maximum pool elevation 910 feet mean sea level. A second earth filled dam located eleven miles downstream at Lincoln School would serve as a regulatory dam. It would be 2100 feet in length, 90 feet above the existing streambed.

The initial power installation at Dickey Dam would be 760 MW with the potential for an additional 380 MW of capacity in the future. Lincoln School Dam would have a total installed capacity of 70 MW. Construction time for the dam structures and facilities would be about eight years. Initial filling would begin in year five and would be completed during year eight.

Electrical transmission facilities associated with the proposed action include: a 138-kv transmission line from the proposed Dickey Dam substation to Fish River substation in Fort Kent, Maine; a steel double circuit single tower 345-kv transmission line from Dickey Dam substation to Moore substation near Littleton, N.H.; a 345-kv wood pole transmission line from Moore substation to Grantie substation near Barre, VT.; a 345-kv wood pole transmission line from Granite substation to Essex substation near Essex Junction, VT. The total length of the proposed line is 365 miles. Right-of-way widths are 100 ft. for the 138 kv lines and 150 ft. for the 345 kv lines. The action also includes the construction of three new substations; the expansion of three existing substations; and construction of 12 microwave communication stations.

The total project including transmission facilities has a benefit-cost ratio (BCR) of 2.1 to 1 based on an authorized interest rate of 3 1/4%, at March 1977 price levels. At 6 3/8%, the BCR is 1.2 to 1.

If constructed, the proposed project would provide 830 MW of installed capacity and 1.2 billion kilowatt hours (KWH) annually of peaking energy, and 262 million kwh annually of intermediate range energy to the New England system. The downstream impact of flow regulation on Canadian power plants would be to increase their annual energy output by approximately 350 million kwh. This impact would result from flow augmentation during naturally occurring low flow periods.

Storage of spring snowmelt would provide flood protection for downstream communities and agricultural lands.

The construction of the transmission line would employ multiple contracts for different sections of the line. The timing of the transmission line construction could be modified to reduce the combined peak labor force near the project site. Approximately 68 workers would be required for the operational phase of the dams. Sixty of these would be from the local area. About 21 workers would be required for operation and maintenance of the transmission facilities.

III IMPACTS

A. Land Requirements

Implementation of the project would commit 127,710 acres of land and water within the U.S. This does not include lands necessary for fish and wildlife mitigation purposes. In the reservoir area, 88,650 acres of existing terrestrial and aquatic habitat would be converted to a standing

IV ALTERNATIVES CONSIDERED

Alternatives to the hydro-electric flood protection and recreation portion of the Environmental Impact Statement include both structural and non structural alternatives. Among the non structural alternatives for hydro power are load management and conservation and power purchases. Gas turbines and pumped hydro facilities were structural alternatives studied. Other alternatives investigated were solar, wind and batteries.

As a result of public review of the draft environmental impact statement for the hydro power facilities, more intensive studies are being conducted on power alternatives and recreation alternatives. The results of these studies will be incorporated in the final environmental impact statement.

Four alternative electrical transmission plans of service were identified. All of these plans extend through Maine, New Hampshire and Vermont. Two of the alternatives follow an eastern route through Maine and two a western route. System studies indicate that each of the alternative plans is capable of integrating the ultimate output of Dickey into the New England electrical system.

Transmission corridors were studied for each plan of service. The corridor study was an effort to: (1) identify a study area; (2) inventory, analyze and map physical, biological and social data; (3) identify alternative corridors; (4) rank the identified corridors based on least environmental impact; and (5) use this information to evaluate alternative system plans. A total of 2,588 miles of transmission corridors were studied for the proposed and alternative plans of service.

Transmission line route alternatives for the proposed plan of service were identified and studied in detail. Approximately 770 miles of route were identified and most segments of the proposed plan have at least 2 or more laternatives that were assessed and ranked for environmental impact. The proposed route is the least impact route based on the results of the detailed environmental impact studied carried out on all routes.